POSTCARDS FROM THE WORLD OF DECENTRALIZED MONEY: A STORY IN THREE PARTS

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Part 1: Alienation, I love you

Barcelona city centre, in an office, 6th floor, 2015
The sunrays were streaming in through the windows, lighting up the faces of a gathering of city council activists, local Bitcoin entrepreneurs, Faircoin anarchists, Freecoin freaks[1] and some levelheaded and very dedicated complementary currency organizers.

Sometimes a single sentence can overshadow plenty of otherwise profound conversation, so I am going to draw up some quick notes on these profundities before letting loose about the statement that echoed in my mind since that afternoon. This is just to tell you that on that spring day in Barcelona there was much interesting and inspiring talk, covering things like:

- the political implications of different currency designs;
- how competitive mining in the Bitcoin *proof-of-work* consensus protocol for verifying transactions might be replaced by a *proof-of-cooperation* collaborative process of automated mining turns;[2]
- how multi-signature cryptocurrency wallets can allow for things like communally held digital wallets, 'money totems';[3]
- how functional coding languages, and bringing code closer to natural languages, can contribute towards intelligibility of complex systems;
- how this is essential for empowering and involving people in the development of systems that increasingly shape their/our lives, including future money infrastructures;
- how the city of Barcelona is working on developing a social currency for poverty reduction and public services;[4]
- that there is a need and interest amongst those present in establishing how these different currencies, for different functions and geographies, interface with each other in some form of common bank to facilitate a currency eco-system;[5]

(… and much, much more that has informed me in my thinking, writing and presentations[6]).

1 I mean freaks in the original sense, not 'weirdos' (read Shelton's Fabulous Furry Freak Brothers for reference).
2 See Thomas König and Enric Duran, 'FairCoin2 White Paper', *Fair-coin.org,* June 2016, https://fair-coin.org/de/faircoin2-white-paper/.
3 See 'D5.5 Implementation of Digital Social Currency Infrastructure', *Dcentproject.eu*, p. 30 September 2015, https://dcentproject.eu/wp-content/uploads/2015/10/D5.5-Implementation-of-digital-social-currency-infrastructure-.pdf.
4 See for example Clara Blanchar, 'Barcelona Contrará con una Moneda Social Propia Pese al Recelo del Banco de España', *El Pais*, 15 November 2016, https://elpais.com/ccaa/2016/11/14/catalunya/1479126762_781950.html.
5 https://bankofthecommons.coop/.
6 See http://distributingchains.org and http://www.jayapapaya.net.

And so the conversations and presentations continued, blah, b-b-bla blah, blockchain, until suddenly the interesting talk took a surreal, slow-motion turn, and I heard:

> Then we can have a truly free market!

Rewind a bit; this was the conclusion of a story by a person working for the progressive Barcelona City Council, *Barcelona En Comu,* on their social currency project. The person had been explicating how technology now allowed for the creation of currencies that can do all kinds of fun and interesting things. And after mentioning a few of these, like self-destructing money — which I agree is very interesting and refers in part to the concept of *demurrage*[7] where money loses value over time, which has the effect of encouraging circulation instead of accumulation — the person gave an example of how such currencies might allow us to *assign value* to the *things we truly value*. In this proposed scenario, a child might draw a drawing, which might indeed be valued by a few members of a community, a grandfather or a neighbor; so why not actually *value* it, and translate it into a value token? This could then be spent in the local bar on some locally brewed beer… Value assigned freely by anyone to anything we value, instead of what banks or bosses value, then we can have

a truly
free
market.[8]

Now, it would be unfair to read this brief example, a clumsy brain dump and play on words haphazardly thrown into the discussion that afternoon, as the position of the city council on social currencies. It isn't, and the Barcelona social currency is not the topic of this story. No, what I want to talk about here is how blockchain technology seems to have spun lots of people into strange, contradictory and entirely unexpected positions on money, markets, power and technology, and my attempts at regaining some stable ground.

What caught me was the glee with which this person wanted to incorporate a child drawing into the circuits and demands of productive activity.

The statement by this municipalist activist, although not representative of policy as such, does point to a broader proposal of possibly monetizing new forms of activity,

7 I heartedly encourage anyone to explore the history and social effects of demurrage currencies — see for example Lietaer's fascinating excavation of demurrage and the incredible prosperity of Medieval Europe in B. Lieataer, *The Mystery of Money: Beyond Greed and Scarcity*, Munich: Riemann Verlag, 2000, pp. 140-203, see also http://www.lietaer.com and https://dcentproject.eu/wp-content/uploads/2015/03/design_of_social_digital_currency_publication.pdf and https://dcentproject.eu/wp-content/uploads/2014/06/D3.4-Field-research-currency_FINAL-v2.pdf.

8 Part of the reason it was surprising was because usually, a political economy of the progressive left would take the position that the 'free market' is a myth because it in fact relies heavily on police enforcement, pro-business government policies and legal processes. The notion of automated governance and law in crypto-currencies is no exception — it's just that some aspects of such regulation would be somehow encoded for automated enforcement. It is no closer to some 'free' or 'natural' state than government, it is just a radically different form or method of government.

work done ‘for the social good’ and so on. It also points to creating new currencies as a way to incentivize efforts that are needed in a community, while relieving pressures from a lack of income from increased unemployment and the dwindling of any welfare support. The background to this is on the one hand a critique of the ways that giant tech companies monetize our social relations and everyday activities through data markets, responding by demanding a wage for these activities they are profiting from, or better yet, wresting these systems from the hands of these companies and running them via public institutions, inventing new currencies to make sure that this work is now paid for. On the other, the anarchist extension of this analysis is: why run them publicly when we can run them ourselves through peer-to-peer networks?

While I might agree with the sentiment — dignifying with an appropriate wage what might otherwise be an exploitative/extractive situation — it can be hard to see how this doesn’t also expand the realms of work and the reach of what is considered tradable. Suddenly, instead of limiting the amount we have to work and keeping certain valued things outside of market dynamics, activities that would normally constitute our free time are made tradable.

I am not going to replicate here a critique that has already been articulated by others[9] about how blockchain is the ultimate vehicle for reproducing neoliberal subjectivity, which amounts to something along the lines of:

the explosive arrival of blockchain technology has splintered neo-liberalism into tiny shards that instead of being destroyed have rained down and pierced into all of us and our stuff, turning all our things into capital/assets and all of our endeavors into work/financial speculation.

There is some hard truth in that. My punk friends are checking the Bitcoin exchange charts daily and diversifying their portfolios into NEO,[10] OMG,[11] Dash,[12] and Ether,[13] banding together to form asset management coops and the like,[14] while other anarchist compañera/os are looking into ways of digitizing and scaling the bartering economy. This is an idea that aligns in an eerie fashion with the ambition of FinTech entrepreneurs of creating not just an *Internet of Things* and *Internet Of Money*, but indeed also what we might call an automated *Economy Of Thing*s that would allow ‘any object to be rented, sold or shared — without middlemen’.[15] (A truly free market — where even money itself is disintermediated, replaced by self-trading objects and interlocking reputation systems?)

9 See for example Rachel O’Dwyer, ‘The Revolution will (Not) be Decentralized: Blockchains’, *Commons Transition,* 11 June 2015, http://commonstransition.org/the-revolution-will-not-be-decentralised-blockchains/ and David Golumbia, ‘Bitcoin as Politics: Distributed Right Wing Extremism’, in Geert Lovink, Nathaniel Tkacz and Patricia de Vries (eds), *MoneyLab Reader: An Intervention in Digital Economy,* Amsterdam: Institute of Network Cultures, 2015, pp. 117-131.

10 https://neo.org.

11 https://omg.omise.co.

12 https://www.dash.org.

13 https://www.ethereum.org.

14 I take part in these activities myself, so be careful and do NOT read this as a criticism of my friends.

15 See for example https://slock.it.

There is much to be worked out, in terms of the politics and what such new behaviors and developments mean in terms of power and efforts to systematize equal access and solidarity. Part of me doesn't mind seeing my friends, some of which have been left tight for cash in the recent economic downturns, find other ways to *get rich fast*, whether through DIY speculation or new forms of employment. Making money can feel brilliantly empowering. I also think the processes of subjectification are still open and more complicated than simply replicating a capitalist logic/subjectivity. For now, it is hard to see much beyond the replication of speculative behaviors because we are in the middle of a gold rush — everyone running head- over-heals to grab a bit (more on this in the next stories.) But for now the monopoly of money has been broken and, for a moment at least, there is experimentation going on that is neither in the hands of any state nor any corporation.[16]

With Bitcoin and the invention of the blockchain,[17] money became programmable and open source and, in the years since, has inspired much experimentation and creativity in this new intersection of computation, currencies, governance and accounting. This new field allows for very fine-grained (re)programming of the medium of money, from what constitutes, and how to measure, value-generating activity to the setting of parameters on the means and conditions of exchange – what is spendable, where and by whom. This also means that the design and programming of money allows for evermore complex means for behavioral engineering, remunerating some behavior over others in ways that can target and apply to some people rather than others.

Money — store of value, a means of exchange or social engineering? I say this not as some sort of gloomy commentary on contemporary society, but as a caution against assuming that bright-eyed intentions of doing good via blockchain currencies necessarily has the effects one might assume. In particular, in efforts that target (the word is perhaps revealing) poverty and the poor.

I would like to offer up just one hopefully helpful concept for thinking through the swirling, changing power dynamics of blockchain and new currency designs: access.

What makes a currency powerful? The fact that it grants access to things, people, services and places. The choice of what you want to monetize or not is power. Allowing or disallowing access via particular currencies is power. The more universal the currency, the more powerful it is. We are most used to this in terms of national currencies granting access to things within a given territory (and the presence of the dollar in other territories as evidence of empire etc.) But programmable currencies can/will also mediate access in relation to different industries, product ranges, demographic, behavior, brand, reputation, identity etc. in an ever more fine-grained manner.

What used to be generalized for a particular territory is about to fracture into layers of differential access — not necessarily a bad thing; this is indeed what a 'currency ecosystem' entails. However, when developing and designing such new political econo-

16 So far this is the case for Bitcoin at least, the first blockchain project, and still very much an experiment run by a community of computer scientists, programmers and enthusiasts.

17 See Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System', *Bitcoin.org*, October 2008, https://bitcoin.org/bitcoin.pdf.

mies, the ways differential access relates to inequality, identity and personal/ collective histories needs to be carefully analyzed. Differential conditions on access for specific goods or services can be disempowering and oppressive or empowering and exclusive, depending on whether you are *the one who gets to determine* the conditions for access. This is how inequality plays a significant role in the effects of differential access.

In a private conversation at a local Barcelona neighborhood street party, a city councilor in fact voiced some of these concerns. That any social currency project aimed at the poor has the danger of creeping towards behavioral engineering whereby for example remuneration is accessed on the conditions of good behavior and is only spendable for certain goods at certified shops. Instead, she said, ideally a social currency project should aim for generalized access to public services, including for the middle class, instead of determined by finely monitored personal or class conditions. Just to mention one example.

So, how, then, did I come to love alienation? That afternoon on the 6th floor in Barcelona, I had a moment of feeling that the only good aspect of the hyper-exploitative free market — you know, the 'free' bit — was slipping away, and I was being chained to an immutable record of past fuck-ups by a vast crowd of smiling activists telling me it's for the common good. I realized I LIKE the fact that cold cash doesn't care about me, you or anyone else. A public utility[18] for general use regardless of who you are.

Money gets blamed for a lot of things. It is seen as the root of all Evil, generating greed and creating alienation by putting a cold medium between our productive efforts and the fulfillment of our needs. But that gap between what was done to get the $$$ and the ability to spend it, the very attribute of *alienation*, money as the universal equalizer, is indeed also an equalizer in the sense that an outcast with a pound coin can spend that pound coin the same way as a respectable priest. A freedom of sorts, from the tyrannical opinions of others. Not necessarily a bad thing. Do NOT misunderstand — I am not saying that cash or the market is neutral. My point is the opposite, that now that money is open for redesign, it is the contingencies rather than intentions that are going to determine the effects, and so, rather than relying on existing political economic assumptions, attention needs to be paid to these.

Strange things can happen in an attempt to humanize the market in the context of automated global network technology. Which in my mind that afternoon looked a little something like bartering + blockchain = possibly the worst of the village with the worst of the metropolis, trade secured by an immutable reputation system in which the repressive whispers of village grannies are instantaneously globally relayed through hyper-connected nodes, lending them a veneer of objectivity while enforcing differential and finely catered mob-justice through alienated smart contract systems. Just to mention yet another dystopian projection for blockchain tech. My point is that a concern for the broader social good can quickly become a sinister endeavor when equipped with the possibilities of powerful, networked technologies.

18 For some good insight into the privatization of cash, see Brett Scott, 'Hang on to your Cash. This dash to Digitise Payments is Dangerous', *The Guardian*, 13 September 2017, https://www.theguardian.com/commentisfree/2017/sep/13/cash-digitise-payments-money-cashless/.

That afternoon in Barcelona I had a sudden wave of premature nostalgia for cash. Nobody cared who I was, nobody cared where my money came from, I could use it to get my Turkish menemen on an easy Sunday morning and that felt great. Alienation, I love you and I miss you already.

Part 2: A tribute to those who will never be peers

Bitcoin github repo, August 1st, 2017
This day in Bitcoin-landia had been marked as the culmination and possible final resolution of a conflict that had been raging for some three to four years. The conflict was about an existing hard limit on the data-size of blocks on the Bitcoin blockchain, set to 1MB — whether and how it should be increased. And today was the day the protocol was going to be hard-and-soft forked[19] into several versions for how to move forward on this question and the development of the project overall.

Other authors have written excellent informative pieces about the politicized nature of what, to some, might seem an obscure technical question and the ways in which it in fact reflects very different understandings of decentralization, power and governance.[20] The story I want to address here is slightly more *meta*. Here is what I think is really at stake in the Bitcoin scaling conflict: The possible shaping of new types of subjectivity.[21]

Bitcoin was first introduced in 2008 as a proposal for a peer-to-peer electronic money system. In this enticing combination of network technology, cryptography and a systems-architecture-that-pays-for-its-own-security-through-some-basic-market-logics the idea was that we could get rid of the need for authorities, like banks, to guarantee relations and trust between people who don't know each other, replacing such trust with cryptographic proof, and thereby run global money systems through networks of peers.

The experiment has since grown immensely — in numbers of people, places, organizations and companies involved, and value moved through the system. It is now facing a

19 A fork refers to when a change is made to the protocol that might not be agreed upon by everyone in the network so that different versions are run by different nodes. A hardfork is a change to the protocol that makes it incompatible with the previous version, essentially splitting the network, while a softfork is still compatible with the previous version. See https://www.btcforkmonitor.info/.

20 See especially van Aaron van Wirdum, 'On Consensus, or Why Bitcoin's Blocksize Presents a Political Trade-Off', *Bitcoin Magazine,* 15 January 2016, https://bitcoinmagazine.com/articles/on-consensus-or-why-bitcoin-s-block-size-presents-a-political-trade-off-1452887468/ and 'Why Some Changes to Bitcoin Require Consensus: Bitcoin's 4 Layers', *Bitcoin Magazine,* 26 February 2016, https://bitcoinmagazine.com/articles/why-some-changes-to-bitcoin-require-consensus-bitcoin-s-layers-1456512578/.

21 I chose the word subjectivity here (instead of 'identity', 'persona', or 'self') because it is interior and exterior, personal and political, it is shaped by the systems and contexts we inhabit as much as our personal evolution, decisions and development. And it is shaped through and in relation to the systems we engage with.

problem of scaling. If you read through crypto-currency news sites,[22] Twitter,[23] threads on Reddit[24] and commentary on Medium,[25] the conflict over scaling was brought on by a concern that the increasing number of transactions were clogging the network because of the hard limit on size of blocks of transactions that were being verified. Some therefore argue the hard limit needs to be increased, while others are wary of such a development as it might centralize aspects of the network and have therefore developed other solutions.[26]

The point is that there are different versions of what decentralization and scaling means and what is important in terms of use-cases and features and the future of the system. While some want to out-compete existing payment systems (Pay-pal, Visa, Master-card), possibly risking centralization of aspects of the network in the process, others want to hold out on such ambitions in order to keep moving towards something entirely different, a vision, perhaps, of Bitcoin more as a vast and still open-ended scientific experiment[27] than (or in addition to) a new global payment system.

Let's look closer at the word 'scale'. Scale has many different meanings: increase in quantity, size, volume and geographical spread. I would like to introduce another vector to the concept of scale — *differentiation*. As the Bitcoin network grows, the fact that you have increasingly differentiated users, uses, and roles means that the nature of the network changes, as do questions of power.

Here's where I am going with this: for a system to be peer-to-peer you need to have a network of, well, *peers*. The assumptions that are usually associated with peer-to-peer, such as horizontality, decentralized power, neutrality, equality and openness can only be considered true if those involved indeed are peers. As more and more people get invested, and are interacting with and developing different aspects of the system, these applications, interactions and people will be *different*, have different capabilities, experiences, abilities and needs (and hey, that do not necessarily run a full client, contribute to or fork the code base.)

This is a tribute to all those who are never going to (be able to) be peers. They might be busy doing other useful things.

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22 See van Aaron van Wirdum, 'On Consensus, or Why Bitcoin's Blocksize Presents a Political Trade-Off'.

23 See for example @sthenc, 'Confession: I was briefly a Bitcoin Classic supporter, before learning more about how bitcoin works.', Twitter post, 4 December 2016, 12:11 AM, https://twitter.com/sthenc/status/805187632929964032.

24 For example VonnDooom, 'Informative BTC vs BCH Articles?', *Reddit*, 6 August 2017, https://np.reddit.com/r/BitcoinMarkets/comments/6rxw7k/informative_btc_vs_bch_articles/.

25 See for example Valery Vavilov, 'Keep Calm and Bitcoin On', *Medium,* 18 January 2016, https://medium.com/@BitFuryGroup/keep-calm-and-bitcoin-on-4f29d581276 or Mike Hearn, 'The Resolution of the Bitcoin Experiment', *Medium,* 14 January 2016, https://blog.plan99.net/the-resolution-of-the-bitcoin-experiment-dabb30201f7/.

26 See Aaron van Wirdum, 'Segregated Witness, Part 1: How a Clever Hack Could Significantly Increase Bitcoin's Potential', *Bitcoin Magazine,* 19 December 2015, https://bitcoinmagazine.com/articles/segregated-witness-part-how-a-clever-hack-could-significantly-increase-bitcoin-s-potential-1450553618/.

27 Jaromil in 'Kaiser Report: Make Bitcoin Great Again (Summer Solutions E1099)', *Youtube*, 20 July 2017, https://www.youtube.com/watch?v=GiXAaa_cvbk&feature=youtu.be/.

'Peer' is one of those curious words that (potentially) means both a person and a node in a technical network. In Bitcoin, a peer would be *miners* and *full nodes* that verify and secure the network, but it also alludes to these people who contribute, are developers and researchers and so on. There is indeed an incredibly active and lively network of actual peers that maintain, experiment with and develop Bitcoin. But I would dare say that most interactions with the infrastructure are no longer by miners nor full nodes, but by people transacting using exchanges and wallets that they probably don't even hold the keys to.

The scaling conflict is not only about increasing block sizes on the blockchain, it is also about Bitcoin having reached such a scale that it can no longer be thought of as composed by peers.

The conflict and now quite high stakes of this infrastructure raises questions of accountability in the decisions being made — by developers, by miners and full nodes (see #UASF). Some aspects of the infrastructure provide an outstanding basis for this: 'commits' and contributions to the code are transparent, the developer's mailing list is all open and there is an impressive amount of glossaries and guides for those who want to look into it. But to benefit from such openness requires not an insignificant level of literacy, time and interest, and the big rifts and murky rumors that have characterized the scaling conflict are not easy to comprehend. Many people are left having to trust the word of some over the word of another (an ironic condition for what is supposed to be a trustless system[28]).

It might be fair to say that a lot of non-peer interactions are by users that we might want to call 'DIY financial speculators', who should take full responsibility for any risk they get themselves involved in. The project started in a sense as a giddy experiment in which the scientists, cryptographers and hackers involved were only really accountable to themselves and their own curiosity and tinkering. And certainly there is an element of this still, the project is as of yet a vast collaborative effort of enthusiasts. Why should they bother about such people?

If the infrastructure is indeed to grow and have use beyond speculation while still staying true to non-state, non-corporate sentiments, then it might be the time to recognize and consider new subjectivities that would form in the process, and the fact that not all of them are going to be peers. So who do we consider to be part of this new constituency and how do we take care of them? Are they 'users' or something else? If a state is supposedly accountable to 'citizens', a corporation is accountable to 'customers' or 'clients' and platforms are accountable to 'users', who are peer-to-peer networks accountable to? When peer-to-peer networks scale how do they deal with *differentiation* and the emergence of non-peers who are dependent on the system? From a less conspiratorial perspective, regulation might be considered a response to this condition in order to ensure accountability. But surely it must be possible to work out some more

28 Trustless refers to the concept of a system that works even if actors within it cannot be trusted. This idea, particular to networks of computers, is assumed to be applicable to other realms such that with the blockchain one would not have to trust institutions, banks or authorities with transactions and balances of accounts as these would be replaced by cryptographic proof instead.

interesting ways to go about accountability and taking care of differences and differential capacities that feel better than the-long-arm-of-the-law, or that do not entail black holes of tedious reporting, nor automated village granny reputation systems…

Unless this is worked out, and until then, this project of 'disintermediation' for those who are not peers is actually a project of *re*intermediation — simply swapping one set of intermediaries (the banks, politicians and legal system) for another (developers, computer scientists and network technology), or, even worse, *adding* another layer of intermediation and complexity.

Part 3: Be woke, be free

In a café, somewhere recently in old Europa
What do these two stories have in common? They are both really a caution against double-speak. I have nothing against double-speak as a cunning strategy and not even that much when it is used as a cynical marketing ploy, but when it is used unconsciously — you, fooling yourself — that, my friend, is unforgivable.

There is a sense that we are in a unique period, that the doors to the money-press have been flung open and we have limited time before the police come running. Literally? Sure, maybe that too,[29] but I actually mean it more broadly in the sense of Ranciere: *the police as the re-establishment of some form of order.*

In contrast to the 'police', (let's carry on a bit with Ranciere) his understanding of 'politics' refers to those moments when a given order is disrupted[30] and renegotiated and new subjectivities emerge as recognized actors. Ranciere calls this *a redistribution of the sensible* — literally, what and who is seen, who counts and is able to act in a given space, is changed, and redistributed across new spaces. This age of cryptocurrencies most definitely resonates with such a description — new subjectivities are emerging, new spaces are being developed (literally) in which those who were not supposed to be able to do certain things, like issue new kinds of money and authorize transactions — they are enthusiastically doing so, defining new conditions and spaces for these actions.

But wait, so where exactly are we now? We are in a café, somewhere in the old Europa, and with me, nibbling a slice of cake, is a European Commission expert advisor, a highly respected computer-engineering professor and soon to join us is a successful blockchain entrepreneur. A bit of intellectual posturing, some networking and the conversation winds its way to the question of what big themes and issues are pressing and how best to structure R&D funding for these. *'The boring sounding problem of taxation might actually be the most urgent and worthwhile to solve'* says the computer engineer. And that is what stuck with me from that conversation.

29 See for example the story of E-Gold.
30 I just want to declare that while I used to be I am no longer a fan of 'disruption'. It has been thoroughly coopted for purposes of chasing competitive advantage rather than freeing up new spaces of doing and being. Instead we are constantly disrupted in all kinds of ways whether we like it or not. Preservation seems more radical these days than disruption.

I would put it differently: the problem, strictly speaking, is of redistribution, for which taxation is the awkward solution we have today, ensuring commonly held and essential infrastructures, services and wealth. But I agree that redistribution is absolutely one of the most urgent and worthwhile problems to work out in a way that is meaningful and effective.

The question of redistribution addresses what many projects of decentralization and local autonomy (or sure, individual autonomy if you're one of those assholes) tend to overlook, a point I have tried to make a few times throughout this short story: that pre-existing conditions of inequality and access to resources means that what might seem progressive can easily be distorted into a nightmare. What looks like *Ah! Nice! Local autonomy and decentralization of power* might in fact simply be decentralization of risk. There is no such thing as a level playing field, land is luscious and bountiful in some parts and contaminated and toxic in others.

If you find yourself bright-eyed before these shiny new architectures, enthusiastically contributing to a machine for automating utopia, take a moment to blink, squint and look again at what you are doing and if it really does, should or ever will live up to the promises on whichever website banner. Be woke so you can stay free when the police come knocking.

So far, redistribution efforts that I have seen in crypto have taken place through two different strategies: collective speculation in which the aim is essentially to take advantage of a window of opportunity, use and abuse the crypto bubble, cash out and give it to cash-strapped solidarity projects. The other is currency creation. There are many different ways that money systems can be designed and programmed. With a rapidly growing field of possibilities that we are facing, literacy in such matters and especially an awareness of the distorting effects of contingencies and interfaces between systems is urgently needed. I believe that currency designers as a new profession, who are able to map contingencies across scales and disciplines, are going to be in high demand. It would be brilliant if some talented, sharp and empathetic heads could look seriously at redistribution and the organization of solidarity across scales.

So, what *would* happen when cops arrive and catch us covered in ink and paper? What would the re-establishment of order look like? When do we know the gold rush is over? Well, there is obviously the possibility that these (ponzi?) schemes simply collapse, that the dosh we so frantically printed is worthless, crypto suddenly has no value, the bubble bursts, tulips,[31] back to the euro, dollar and so on. Or, the owners of the money-press (would that be the state or private banks?) bring in the police and set out some terms and conditions for our use of the money press, (regulation) limiting access for certain people and purposes.

OR, in a much more interesting twist to the story, that this new tech actually proves itself, that it allows for a true *redistribution of the sensible*, in which new subjectivities emerge that are empowered to engage in the shaping and governing of commonly held global infrastructures. Bitcoin was introduced to the world as online cash, a noble

31 See tulip mania in 1619-1622 – a favorite historical reference for critics of Bitcoin.

proposition in a world headed for privately controlled and surveilled electronic payment systems, whether one disagrees with its anarcho-capitalist protocol design and speculative tendencies or not. But blockchain, while originally invented to support this online cash, in fact allows for much more fine-grained design and control of money, its flows and conditions — and in its evolution these contradictory possibilities have exploded in all directions. In the midst of the start-up mania, the vortex of life-changing, *make money moneeeey* opportunities, remember to stay woke: What is now at stake is the question of developing a global money system that is neither a public utility (cash) nor private infrastructure (electronic payments via banks), a question of governance as much as cryptographic properties, currency design and technical features. Indeed, an experiment with lots of risky, unintentional, clumsy and strange outcomes that simultaneously raises all the right questions.

References

Blanchar, Clara. 'Barcelona Contrará con una Moneda Social Propia Pese al Recelo del Banco de España', *El Pais*, 15 November 2016, https://elpais.com/ccaa/2016/11/14/catalunya/1479126762_781950.html.

'D5.5 Implementation of Digital Social Currency Infrastructure', *Dcentproject.eu*, 30 September 2015, https://dcentproject.eu/wp-content/uploads/2015/10/D5.5-Implementation-of-digital-social-currency-infrastructure-.pdf.

Golumbia, David. 'Bitcoin as Politics: Distributed Right Wing Extremism', in Geert Lovink, Nathaniel Tkacz and Patricia de Vries (eds), *MoneyLab Reader: An Intervention in Digital Economy,* Amsterdam: Institute of Network Cultures, 2015.

Hearn, Mike. 'The Resolution of the Bitcoin Experiment', *Medium,* 14 January 2016, https://blog.plan99.net/the-resolution-of-the-bitcoin-experiment-dabb30201f7/.

Jaromil, 'Kaiser Report: Make Bitcoin Great Again (Summer Solutions E1099)', *Youtube*, 20 July 2017, https://www.youtube.com/watch?v=GiXAaa_cvbk&feature=youtu.be/.

König, Thomas and Enric Duran. 'FairCoin2 White Paper', *Fair-coin.org,* June 2016, https://fair-coin.org/de/faircoin2-white-paper/.

Lieataer, B. *The Mystery of Money: Beyond Greed and Scarcity*, Munich: Riemann Verlag, 2000.

Nakamoto, Satoshi. 'Bitcoin: A Peer-to-Peer Electronic Cash System', *Bitcoin.org*, October 2008, https://bitcoin.org/bitcoin.pdf.

O'Dwyer, Rachel. 'The Revolution will (not) be Decentralized: Blockchains', *Commons Transition,* 11 June 2015, http://commonstransition.org/the-revolution-will-not-be-decentralised-blockchains/.

Scott, Brett. 'Hang on to your Cash: This dash to Digitise Payments is Dangerous', *The Guardian*, 13 September 2017, https://www.theguardian.com/commentisfree/2017/sep/13/cash-digitise-payments-money-cashless/.

Vavilov, Valery. 'Keep Calm and Bitcoin On', *Medium,* 18 January 2016, https://medium.com/@BitFuryGroup/keep-calm-and-bitcoin-on-4f29d581276.

VonnDooom. 'Informative BTC vs BCH Articles?', *Reddit*, 6 August 2017, https://np.reddit.com/r/BitcoinMarkets/comments/6rxw7k/informative_btc_vs_bch_articles/.

Wirdum, Aaron van. 'Segregated Witness, Part 1: How a Clever Hack Could Significantly Increase Bitcoin's Potential', *Bitcoin Magazine,* 19 December 2015, https://bitcoinmagazine.com/articles/segregated-witness-part-how-a-clever-hack-could-significantly-increase-bitcoin-s-potential-1450553618/.

_____. 'On Consensus, or Why Bitcoin's Blocksize Presents a Political Trade-Off', *Bitcoin Magazine,* 15 January 2016, https://bitcoinmagazine.com/articles/on-consensus-or-why-bitcoin-s-block-size-presents-a-political-trade-off-1452887468/.

_____. 'Why Some Changes to Bitcoin Require Consensus: Bitcoin's 4 Layers', *Bitcoin Magazine,* 26 February 2016, https://bitcoinmagazine.com/articles/why-some-changes-to-bitcoin-require-consensus-bitcoin-s-layers-1456512578/.